

Serial No. 10/516,084
Atty. Doc. No. 2002P07513WOUS

REMARKS

Claims 38-42 are pending in this application. Claims 38-42 stand rejected under 35 USC 103(a) as being unpatentable over Kajino in view of Bast and various portions of MPEP 2144.

Independent claim 38 has been amended herein to include the limitations that the monitoring structure comprises a resonant circuit, which in turn comprises an electrical conductor that is placed at a critical length from the edge of the heat shield; and further that the monitoring device is adapted for wireless interrogation of the monitoring structure via electromagnetic excitation of the resonant circuit; wherein a crack propagating from the edge of the heat shield toward the center of the heat shield exceeding the critical length will cause a crack in the electrical conductor, thereby changing a resonance of the resonant circuit that is detectable by the monitoring device for identifying the heat shield as defective.

The combination of elements of amended claim 38 is neither taught nor suggested in the prior art. This combination is particularly advantageous because the device used to detect the growth of a crack in the heat shield (i.e. the electrical conductor) also functions as part of a resonant circuit and as an antenna for wireless communication with the monitoring device. Prior art devices require separate structures to perform these separate functions and therefore teach away from claim 38. Thus claim 38 and its dependent claims 39 and 41 are believed to be in condition for allowance.

Dependent claim 39 adds the further limitation the electrical conductor is formed in the shape of a ring around the center of the heat shield at the critical length distance from the edge, thereby enabling the monitoring structure to monitor an entire surface of the ceramic heat shield. Prior art devices such as that taught by Ueda teach away from such limitations by monitoring only a portion of a surface of a device.

New claims 43 and 44 are also presented for examination.

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Conclusion:

Entry of this amendment prior to the continued examination and allowance of claims 38, 39, 41, 43 and 44 are respectfully requested.

Respectfully submitted,

Dated: _____

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